

New York Times

November 14, 2007

Study Compares States' Math and Science Scores With Other Countries'

By [SAM DILLON](#)

American students even in low-performing states like Alabama do better on math and science tests than students in most foreign countries, including Italy and Norway, according to a new study released yesterday. That's the good news.

The bad news is that students in Singapore and several other Asian countries significantly outperform American students, even those in high-achieving states like Massachusetts, the study found.

"In this case, the bad news trumps the good because our Asian economic competitors are winning the race to prepare students in math and science," said the study's author, Gary W. Phillips, chief scientist at the American Institutes of Research, a nonprofit independent scientific research firm.

The study equated standardized test scores of eighth-grade students in each of the 50 states with those of their peers in 45 countries. Experts said it was the first such effort to link standardized test scores, state by state, with scores from other nations.

Gage Kingsbury, the chief research and development officer at the Northwest Evaluation Association, a group in Oregon that carries out testing in 2,700 school districts, praised the study's methodology but said "a flock of difficulties" made it hazardous to compare test results from one country to another and from one state to another. "Kids don't start school at the same age in different countries," he said. "Not all kids are in school in grade eight, and the percentage differs from country to country."

Because of such differences, Dr. Kingsbury said, it would be a mistake to infer too much about the relative rigor of the educational systems across the states and nations in the study based merely on test score differences.

The scores for students in the United States came from tests administered by the federal Department of Education in most states in 2005 and 2007. For foreign students, the scores came from math and science tests administered worldwide in 2003, as part of the Trends in International Mathematics and Science Study, known as the Times.

Concern that science and math achievement was not keeping pace with the nation's economic competitors had been building even before the most recent Times survey, in which the highest-performing nations were Singapore, Taiwan, South Korea, Hong Kong and Japan. American students lagged far behind those nations, but earned scores that were comparable to peers in European nations like Slovakia and Estonia, and were well above countries like Egypt, Chile and Saudi Arabia.

The Times survey gives each country a metric by which to compare its educational attainment with other nations'. The nationwide American test, known as the National Assessments of Educational Progress, allows policy makers in each state to compare their students' results with those in other states.

The new study used statistical linking to compare scores on the national assessment, state by state, with other nations' scores on the Times. Dr. Phillips, who from 1999 to 2002 led the agency of the Department of Education that administers the national assessment, likened the methodology to what economists do when they convert international currencies into dollars to compare poverty levels across various countries, for instance.

On the most recent national assessment, the highest-performing state in math was Massachusetts, and in science, North Dakota. The new study shows that average math achievement in Massachusetts was lower than

in the leading Asian nations and in Belgium, but higher than in 40 other countries, including Australia, Russia, England and Israel.

Mississippi was the lowest-performing state in both math and science. In math, Mississippi students' achievement was comparable to those of peers in Bulgaria and Moldova, and in science, to those in Norway and Romania.

In math, New Jersey, Connecticut and New York students were roughly equivalent with each other and with their peers in Australia, the Netherlands and Hungary.

The study's contribution is the high-level perspective it offers on the nation's education system, a bit the way a satellite image highlights the nation's topography, said Thomas Toch, a co-director of Education Sector, an independent policy group.

"It shows we're not doing as badly as some say," Mr. Toch said. "We're in the top half of the table, and a number of states are outperforming the majority of the nations in the study. But our performance in math and science lags behind that of the front-running Asian nations."

Correction: November 24, 2007

An article on Nov. 14 about a study that compared the scores of American students on an international test with those of students from other countries described incorrectly in some editions the performance of Mississippi students. Although they did indeed score higher than students in Norway, they did not do better than those in Italy.